

APPENDIX B – INTERGRATED RESOURCES MANAGEMENT PLAN

Watts Bar Reservoir - Integrated Resource Management Plan

TVA's Mission in Integrated Resources Management

In managing its public lands and resources, TVA seeks to exceed regulatory requirements and applicable guidelines through effective and efficient integrated resource stewardship that is responsive to stakeholder interests. TVA manages for an optimum level of multiple uses and benefits that protect and enhance natural, cultural, recreational, and visual resources in a cost effective manner. Through its integrated resource management (IRM) approach, TVA ensures that resource stewardship issues and stakeholder interests are considered while optimizing benefits and minimizing conflicts. IRM is based on cooperation, communication, coordination, and consideration of stakeholders potentially affected by resource management. IRM recognizes that the management or use of one resource affects the management or use of others; therefore, an integrated approach is more effective than considering resources individually.

IRM Process Goals

In managing public lands and resources under its authority, TVA seeks to:

- Exceed regulatory requirements and applicable guidelines by providing effective and efficient management of natural, cultural, visual, and recreation resources.
- Apply an integrated, proactive, approach that balances the competing interests of stakeholders, while conserving and enhancing natural, cultural, visual, and recreation resources.
- Ensure the availability of a diversity of quality, affordable, public outdoor recreation opportunities.
- Demonstrate TVA's commitment to resource stewardship through applied integrated resource management.
- Determine the effectiveness of resource management through continuous monitoring of resource conditions and public recreation needs and opportunities.
- Manage resources in a cost effective manner.

Resource Specific Management Objectives

Natural Resources Management:

- Provide long term public benefits through effective, efficient, and integrated management of natural resources.
- Manage to sustain long-term health of native ecosystems, balance competing interests of natural resources dependent stakeholders, and provide an array of natural resources derived benefits.
- Future natural resources management activities will stress maintenance and enhancement of ecological diversity in consideration of adjacent land uses and surrounding ecological conditions.
- Consistent with stakeholder interests, cost recovery mechanisms may be applied and could include such management activities as timber harvest and agricultural production.
- Efforts will be made to cost share with cooperating groups or agencies for IRM plan implementation activities.
- Natural resources data will be collected and analyzed to support IRM.

Cultural Resources Management:

- Develop and maintain a current, systematic, and comprehensive cultural resources information data base that supports IRM.
- Implement appropriate technologies and methods for monitoring, protecting, preserving, and treating cultural resources.
- Develop approaches for managing cultural resources that ensure consideration of stakeholder interests.
- Provide for public awareness of cultural resources through interpretation.

Recreation Resources Management

- Provide for a diversity of quality, affordable, public outdoor recreation opportunities, consistent with stakeholder interests, while protecting and enhancing public lands and resources.
- Develop a system for collection and analysis of recreation data that supports IRM.
- Facilitate recreational use of TVA lands and reservoirs through development and distribution of print and electronic media.
- Establish priorities for completing recreation needs assessments, and “gap analysis” for selected reservoirs.
- Explore opportunities for expanded cost recovery and revenue generation.
- Efforts will be made to cost share with cooperating groups or agencies to provide enhanced recreational use opportunities on TVA lands and reservoirs.

Visual Resources Management:

- Establish a uniform objective methodology for the management of visually sensitive attributes and other aesthetic elements in the landscape.
- Evaluate visual resources using the uniform methodology while considering stakeholder interests.
- Ensure that the results of the visual resource management evaluation are clearly communicated to stakeholders.
- Manage visual resources in a manner that sustains quality aesthetics in the landscape.

Proposed Integrated Resource Management Program

The following management plan for Watts Bar Resource Unit (WBRU) is based on area specific recommendations from stakeholders and the experience and professional judgment of TVA resource managers and cooperating agencies. This plan contains the four major resource areas (natural resources, recreation resources, cultural resources, and visual resources) and addresses Zones 2, 3, 4, and 6. It consists of a series of actions that would be implemented over the 10-year Watts Bar Reservoir Land Management Plan horizon. A summary of activities is presented, with an anticipated schedule of activities for the first five years (See Tables B-1 and B-2). (Because many of the activities are data gathering exercises, specific actions and locations will be determined from the results of the data collected. However, the activities anticipated for implementation are discussed in each resource section and the impacts of each will be addressed in the Watts Bar Reservoir EIS. Specific parcels and locations will be determined and included in the annual work plans which are developed.) The IRM schedule will be reviewed annually to assess priorities and make adjustments as needed to meet resource goals, stakeholder needs, and budgetary constraints. At the completion of the first five years, a schedule will be developed for the remainder of the plan.

Natural Resource Management

Natural Resource management includes activities for Public Use Management, Wildlife Habitat Management, Forest Management, Natural Areas Management, Wetlands Management, and Resource Maintenance and Protection. Each of these resources and the activities proposed are in the following section. For these resources there are many activities which are maintenance oriented and will be implemented annually. Many of the proposed activities are data collection; the results of these surveys and monitoring activities will determine future resource needs which will be incorporated into the IRM schedule. Shoreline stabilization is also discussed briefly in this plan, but no actions are proposed because TVA prioritizes these activities on a valley-wide basis.

Because surveys and data collection have not been conducted on all WBRU lands, natural resource management activities that are proposed are described but do not have parcel specific locations in all cases. Where data is available, parcel specific locations are given. As data collection is implemented as part of this plan, parcel specific locations will be determined. However, all of the anticipated activities for natural resource management on WBRU lands are included in the proposed actions.

Public Use Management

Road access is essential for meeting stakeholder-identified needs for WBRU. By improving overland access, the public has a means of using the Unit for bank fishing, hunting, hiking, wildlife viewing, camping, and other activities that were identified as important by stakeholders. Improved access also affords TVA better opportunity to manage resources actively. However, as road access is improved and developed, the incidence of public land abuses such as dumping and ATV abuse can also increase. To address this potential problem, gates and other road barriers would be installed to prevent vehicular access within certain portions of the Unit, or at certain times of the year throughout the unit. However, for those areas where road access is restricted, shoreline access sites would be developed to facilitate access to Unit lands from the water.

Hiking and camping were identified by stakeholders as activities that should be improved or enhanced. Because trail construction and maintenance is a very expensive effort, existing roads and planned renovations on other roads will also be used to accommodate improvements for hiking. The roads will be open for a number of uses, including hiking, horseback riding, and mountain biking. Periodic mowing will facilitate use by hikers and other users. Camping opportunities will be enhanced by maintenance of existing vehicular access roads, development of reservoir access sites, and production of a Unit brochure and map that identifies the TVA lands.

To provide for improved public recreational access to WBRU, and to manage better the resultant increase in public use, under the IRM, TVA would conduct the following activities for Public Use Management:

- Periodically repaint and sign TVA boundary so the public will know what lands are accessible. The goal is to adequately delineate TVA land to facilitate public use. This activity should reduce potential conflicts between adjacent property owners and users of the TVA lands by clearly establishing the boundary.
- Conduct routine, periodic maintenance of vehicular access roads in the Unit. Roads are essential for public access and require periodic maintenance to control erosion and re-grade surfaces. Activities would include regrading with dozer or tractor, ditching, installation and maintenance of broad-based dips and culverts for erosion control, and graveling. Roads of high priority that would be scheduled for maintenance in the first 5-year schedule include those that are located on Parcels 76, 130, 223, and 224.
- Control vehicular access by installing gates, fences, dirt berms, and other structures on roads and trails. Parcels affected in the first 5-year schedule include 76, 130, 165, 233, 283, and 285.
- To better identify TVA public lands in general, and to facilitate public use of WBRU, develop a brochure and map. The brochure would identify vehicular access roads, daylighted roads, permanent openings, reservoir access points, bank fishing areas, and other facilities. The brochures would also include general use guidelines and other pertinent information on the Unit.
- Meet anticipated public parking needs by constructing small parking areas; these areas would generally provide enough parking to accommodate four to five vehicles and would impact less than 1 acre. In the first 5-year schedule, develop a parking area at Fooshee Peninsula (Parcel 7) to access the trail, Riley Creek Campground (Parcel 76), and on Parcels 283 and 285.

One of the most commonly expressed concerns by stakeholders is trash and dumping on TVA lands and shoreline. Numerous efforts by TVA to control the problem have failed to produce significant gains except through access control and public exclusion. Although the majority of TVA land users do not cause the problems, those persons responsible often dictate what the majority must live with in the way of use restrictions. Without constant surveillance or luck, there is little chance of catching those responsible for the dumping. To help control the litter problem on WBRU the following measures would be applied:

- Access would be restricted in those areas where dumping has historically been a problem. Areas that have received heavy dumping in the past become established as dumping spots and access must be restricted to prevent further problems. Areas such as this would be gated or cabled to prevent vehicular access.
- Identify sources of trash (household, picnic use, etc.) and work with local governments to ensure availability of dumpsters. Household garbage should be placed in county-

maintained dumpsters; if there is not convenient access to such, dumping will continue. By strategically placing convenience (dumpster) centers, dumping on TVA lands may be reduced.

- Build volunteer support and assistance in community and lake cleanups. TVA would serve as the coordinator of cleanups and provide bags, gloves, and other supplies to facilitate such cleanups.
- Clean up heavily abused and trashed areas. Areas that receive heavy dumping, particularly those that require significant investments of labor and equipment, would be cleaned by TVA staff and/or private contractors.
- Place trash receptacles in areas of high public use and work with local volunteers to ensure periodic pick up. Strategically placed trash receptacles can minimize trash problems. TVA would work with volunteers to ensure that the cans are emptied regularly.

Wildlife Habitat Management

Stakeholders expressed interest in preserving and enhancing wildlife habitat on TVA lands to balance the loss of habitat by development. Specific comments said that TVA should plant more native warm season grasses and manage forest lands to improve habitat. Wildlife related activities identified by stakeholders who use Watts Bar include wildlife viewing and hunting.

To improve wildlife habitat conditions on WBRU, management activities would focus on increasing the availability of food and cover on unit lands. These enhancements would be accomplished by manipulating successional patterns for vegetative communities occurring within the Unit (through timber harvesting and creation of forest openings), conversion of fescue pasture to wildlife food plots and native grasses, and by daylighting road segments and planting roads in wildlife food plants. Openings, and daylighted road segments provide feeding areas for turkey, deer, grouse, quail, and songbirds. In timber harvest areas, stump sprouts and the resurgent seedlings and saplings, provide food and cover for a variety of game and nongame wildlife. Throughout the Unit, selected areas of late successional hardwood forests would be retained to provide habitat for species preferring this type of forest community.

Within WBRU, and on adjacent private property, agricultural lands consist primarily of fescue pasture that provides few, if any, benefits for wildlife. In fact, fescue sod is so dense that quail and other wildlife species cannot move through it. Additionally, this species of grass holds little, if any, nutritional value for wildlife. Conversely, the clumping growth habit of native warm season grasses (NWSG) allows wildlife to move freely, and the areas of bare soil between clumps are utilized for feeding and dusting. Native grasses also have high nutritional value and are decidedly more palatable to certain species of wildlife such as white-tailed deer.

Under the IRM TVA would conduct the following activities for Wildlife Habitat Management:

- Conduct habitat enhancement activities along new road segments by daylighting, disking, and seeding road shoulders with wildlife food plants such as clover, lespedeza, winter wheat, and orchard grass.
- To increase grassland habitat, which is important to a variety of wildlife species, establish native warm season grasses on agricultural lands. Conversion would consist of application of herbicides (Roundup and Plateau), followed by disking and planting. In the first 5-year schedule under the IRM, Parcels 223 and 224, approximately 15 acres of prior grazing/pasture land, would be converted. Also, continue and expand conversion on Parcel 3 in cooperation with agricultural licensee and TWRA. NWSG will be maintained by annual or

biennial mowing and/or control burning. Control burns stimulate NWSG growth and suppress competition.

- To facilitate wildlife viewing on Parcel 3, develop public access and trail system. The trail would go through a variety of forest, wetland, and grassland habitats and create excellent wildlife observation potential.
- Install wildlife nest boxes (e.g., for bluebirds and wood ducks) along riparian zones and adjacent to wildlife openings within the Unit.
- Develop new wildlife openings; clear, disk, fertilize (lime, as needed), and plant with wildlife food plants such as clover, native warm season grasses, chufa, and winter wheat. In the first 5-year schedule, develop a wildlife opening on Fooshee Peninsula (Parcel 7).
- Periodically renovate wildlife openings and road shoulders by disking and reseeding. Disking maintains the openings in an early successional condition by creating conditions favorable for development of native grasses and forbes preferred by many wildlife species.
- Conduct annual or biennial maintenance on wildlife openings and road shoulders by mowing and/or controlled burns. These activities would keep these open areas in an early successional state that is needed to provide a diversity of wildlife habitat. In the first 5-year schedule Lowe Branch (Parcels 297 and 299) and Fooshee Peninsula (Parcel 7) would be implemented.
- Continue to license selected TVA lands for agricultural use.
- Monitor islands with high wading bird use for shoreline erosion problems. Stabilize and protect impacted island shorelines from erosion by planting with native species and/or riprap. Under IRM, Half Moon Island (Parcel 227) and other small islands would be treated.
- In accordance with the Federal Executive Order on Migratory Birds, explore Important Bird Area designation with TWRA. Identify interior forest components and conduct neo-tropical migrant bird surveys. Under the first 5-year schedule of IRM, Parcels 7, 8, 46, 142-148, and 295-299 would be explored.
- Treat invasive exotic plant species (sericea lespedeza, kudzu, Nepalgrass, privet, reed canary grass, etc.) with Garlon, Transline, Roundup, and other herbicides. Exotic plants can severely reduce establishment and persistence of planted wildlife foods and compete with native vegetation. Many of these exotics have little value to wildlife and preferred planted species will better meet stakeholder desires for improved wildlife habitat. Stakeholders were also concerned that invasive exotic plant species will spread to private lands and further impact native vegetation. This activity will also meet guidelines set forth in Executive Order 13112 (Invasive Species). Under the IRM, the following parcels would be addressed: 18, 23, 72, 82, 130, 137, 159, 161, 166, 168, 186, 187, 188, 193, 233, 267, 268, 281, and 297-299.
- Control unwanted nuisance wildlife where problems arise. Activities would include trapping and eradication where needed. Control beaver population on Bullard Branch (Parcel 173) to protect Harriman sewer lift station.
- Meet with TWRA Region III personnel at least quarterly to develop long-range management plans for TVA properties managed by TWRA under land-use permits for wildlife management purposes. This includes Watts Bar Lake Wildlife Management Area and Paint Rock Wildlife Refuge (Parcels 7, 35, 46, 50, 72, 75, 78, 88, 227, 254, 276, and 286).
- Survey and examine Muddy Creek embayment and wetlands (Parcels 267 and 268) with TWRA and Ducks Unlimited (DU) personnel to determine potential for joint venture habitat development.

Forest Management

As eastern hardwood forests mature, the percentage composition of oak decreases. This is because of; 1) lack of disturbance from fire and grazing that previously suppressed shade-tolerant species such as maple, beech, and sourwood, 2) selective timber harvesting systems that promote the growth of shade-tolerant species, and 3) oaks, especially red oak species, are rapidly reaching physiological maturity, and mortality is increasing. Even-aged timber harvesting provides the best opportunity for regenerating oaks because it allows enough sunlight for shade-intolerant oaks to compete with more shade-tolerant species. Oaks are an important source of food for numerous wildlife species such as squirrels, wild turkey, and deer.

A diversity of forest conditions and ages are important for wildlife. As forests mature, each developmental stage provides benefits for different arrays of wildlife species. By maintaining a mosaic of ages classes within various forest communities, wildlife diversity and production can be increased.

TVA would utilize a variety of manipulative strategies within forested habitats to improve resource conditions and meet stakeholder desires for hiking, hunting, and wildlife viewing. The proposed activities will provide a number of benefits including:

- Maintained forest health and vigor
- Sustained or increased levels of ecological diversity
- Opportunity for private landowners to see sustainable harvesting techniques with proper BMPs
- Enhance mast species and improve food source for Unit wildlife populations
- Opportunity for multiple uses of daylighted roads for habitat openings, wildlife food source, hiking, biking, and hunting

Under the IRM TVA would conduct the following activities for Forest Management:

- Conduct field inventory of forest resources on Fooshee Peninsula (Parcel 7), Lowe Branch (Parcels 285, 291, and 299), Holiday Hills (Parcel 54) and Clinch River Breeder Site (Parcels 142, 143, and 145) and assess forest management needs.
- Conduct control burns to enhance advance regeneration of oaks and control undesirable hardwoods in pine stands, as prescribed in forest inventory, on Fooshee Peninsula (Parcel 7), Lowe Branch (Parcel 297-299), and Clinch River Breeder Site (Parcels 142, 143, and 145). Burns would be conducted in late winter to early summer to eliminate competing undesirable competition in the understory (red maple, blackgum, and beech) and increase the percentage of oak in these areas after harvest. Oak mast is an important component of many wildlife species (deer, turkey, and squirrel) diet and provides a source of winter nutrition. Reduction of hardwood competition in pine stands will increase growth and vigor while providing good wildlife habitat.
- Harvest mature Virginia pine on Fooshee Peninsula (Parcel 7) as prescribed in forest inventory. The resulting stand would be primarily upland hardwood, largely from stump and root sprouts. The area on which the Virginia Pine is now present was a pasture at the time of TVA purchase. Virginia pine, a pioneer species that invades disturbed areas and old fields, grows very fast but is not long lived. When the pine matures and begins to die, hardwood in the understory becomes the next forest. The proposed harvest would accelerate this succession, or conversion, from pine to hardwood and would create a more optimal condition to regenerate oaks. Harvesting the pine is the preferred option because the hardwood will have a better situation to regenerate without falling pines that would create a tangle of dead trees and impact the quality of regenerated hardwood. Although

allowing the pine to regenerate to hardwood naturally would create good wildlife habitat, the resulting harvested area would have a similar result.

- Conduct timber harvests in mature hardwood stands on Fooshee Peninsula (Parcel 7) and Clinch Breeder Site (Parcels 142, 143, and 145) as prescribed in forest inventory. Multiple harvests would be scheduled over the next 20 years to create a mosaic of early successional hardwood forest cover. This will insure that these areas; 1) represent hardwood communities in all age classes, 2) create vigorous young stands, and 3) provide improved food and cover for deer, turkey, grouse, and songbirds.
- Assess wildfire danger and fire suppression accessibility in cooperation with the Tennessee Division of Forestry (TDF). Develop a plan with TDF that identifies areas of potential wildfire danger, precautions which are needed to minimize danger, and identify access points for fire suppression activities. Conduct control burns on selected forested parcels to reduce wildfire danger, control undesirable vegetation, enhance and promote oak regeneration, and improve wildlife habitat. Burns would be conducted under contract with TDF.
- Develop, maintain, and enhance partnerships with Federal and State agencies on forest health related issues and problems. Conduct inventories for forest protection from insects and disease.
- Maintain/enhance tree improvement work with local universities on Parcels 7, 130, 141, 142 through 145, and others on Watts Bar.

Natural Areas Management

In 1983 TVA began a program of identifying and protecting areas or features of natural and scenic significance on TVA lands. Under this program, a classification of "Natural Areas" was developed which includes; 1.) Small Wild Areas; 2.) Ecological Study Areas; and 3.) Habitat Protection Areas. Small Wild Area (SWA) designation is reserved for those sites which have "exceptional natural, scenic, or aesthetic qualities, which are suitable for low-impact public use". Ecological Study Areas (ESA) consists of "sites judged suitable for ecological research or environmental education". Habitat Protection Areas (HPA) are established to "protect populations of species that have been identified as threatened or endangered by the U. S. Fish and Wildlife Service or that are rare to the State in which they occur".

Under the IRM, TVA would continue to monitor and protect Natural Areas. Areas would be monitored periodically to assess the status of sensitive resources, check for abuses, and take corrective measures to protect the integrity of the resources. Assessments would include surveys of sensitive plant and animal populations, evaluation of habitat status, and other activities needed to monitor sensitive resources. Protection activities would include access control (gates, cables, and other vehicular barriers), signage of TVA property and Natural Area boundary, posting of signs (TVA rules and regulations, no dumping, vehicles prohibited, etc.), renovation of vehicular abuse, removal of trash and litter, and other activities. The assessments would also be used to determine whether Natural Areas should remain in their designation or be removed.

TVA would continue its cooperative relationship with the Tennessee Citizens for Wilderness Planning (TCWP) in management of the Whites Creek Small Wild Area. The partnership would work together to develop a trail on the newest section of the SWA allocated in the Watts Bar Reservoir Plan.

Under the IRM TVA would conduct the following activities for Natural Areas Management:

- Periodically remark and install boundary signs on Natural Areas.
- Work with the U. S. Fish and Wildlife Service (USFWS), TWRA, and private landowners to protect bald eagle nest sites at Marney Bluff (Parcel 65) and Piney River (Parcel 285).
- In cooperation with USFWS, explore protection measures for Sensabaugh Cave, which is adjacent to Parcels 25 and 12-6, to protect gray bat habitat.
- Survey and monitor gray bat use of Marble Bluff Cave (Parcel 91).
- Survey habitat and explore potential for establishment of Virginia spiraea and Cumberland rosemary at the mouth of Whites Creek (Parcel 233).
- Periodically monitor TVA Natural Areas; Fooshee Small Wild Area (Parcel 8), Whites Creek Small Wild Area (Parcel 237 and 238), Marney Bluff Habitat Protection Area (Parcel 65), Stowe Bluff Habitat Protection Area (Parcel 196), Rayburn Bridge Habitat Protection Area (Parcel 194), Sugar Grove Habitat Protection Area (Parcel 152), Grassy Creek Habitat Protection Area (Parcel 146), Marble Bluff Habitat Protection Area (Parcel 91), Polecat Creek Slopes Habitat Protection Area (Parcel 94). On HPAs, conduct plant surveys, refine boundaries, exotic species surveys, and assess management needs to protect resources.
- Construct new trail segment, in partnership with TCWP, on new portion of Whites Creek Small Wild Area (Parcel 237) and across TWRA (Parcel 12-26) to connect with existing trail on Parcel 238. Maintain existing trails at Whites Creek SWA (Parcel 238) and Fooshee Peninsula SWA (Parcel 8).
- Coordinate land transfer of Bowater property to be included in Whites Creek Small Wild Area (Parcel 238)

Wetlands Management

Executive Order 11990 (Protection of Wetlands) directs federal agencies to minimize the destruction, loss, or degradation of wetlands and to preserve and enhance the natural and beneficial values of wetlands. In addition, activities in wetlands are regulated under the authority of the federal Clean Water Act and various state water quality protection regulations.

Watts Bar Reservoir wetlands were identified and classified using the USFWS National Wetlands Inventory (NWI) mapping conventions and the system developed by Cowardin et al (1979). Selected wetlands were examined during 2004 using the TVARAM (TVA Rapid Assessment Method), a method of sampling and classifying wetlands.

TVA has developed a version (TVARAM) of the Ohio Rapid Assessment Method (ORAM v.5.0) specific to the TVA region for use in guiding wetland mitigation decisions consistent with TVA's independent responsibilities under the National Environmental Policy Act and the Wetlands Executive Order (11990). A copy of the TVARAM data form is presented in Table B-3. The Ohio Rapid Assessment Method is designed to distinguish between three categories of wetlands:

- Category 1 wetlands are described as "limited quality waters". They are considered to be a resource that has been degraded, has limited potential for restoration, or is of such low functionality, that lower standards for avoidance, minimization, and mitigation can be applied.
- Category 2 includes wetlands of moderate quality and also wetlands that are degraded but could be restored.

- Category 3 generally includes wetlands of very high quality and wetlands which are of concern regionally and/or statewide, such as wetlands which provide habitat for threatened or endangered species.

Wetlands occurring in Watts Bar Reservoir and its tributaries are in the Palustrine system (P), and the forested (FO), scrub-shrub (SS), emergent (EM), and aquatic bed (AB) subsystems. In the forested and scrub-shrub wetlands, the vegetation class is “broad-leaved deciduous”, which is designated by the number 1. In the emergent wetlands, the vegetation class is “persistent”, designated by the number 1, and “non-persistent”, designated by the number 2. The term “persistent” refers to herbaceous vegetation with aboveground parts that persist through the non-growing season, such as, for example, the dry remains of cattail and sedges. “Non-persistent” vegetation dies back completely to ground level during the non-growing season. The hydrologic regimes in these wetlands were judged to include temporarily flooded (A), and seasonally flooded (C), although it is possible that other hydrologic regimes, such as saturated (B) and semi-permanently flooded (F) occur.

Under the IRM TVA would conduct the following activities for Wetlands Management:

- As mandated in Executive Order 11990, monitor wetlands and conduct activities as needed for protection from abuse and degradation.
- Conduct TVARAM and rare plant surveys to further quantify ecological significance of wetlands. In the first 5-year schedule of the IRM, highest priority parcels to survey include 103, 160, 183, 185, 188, and 268; parcels of medium priority include 166, 169, 233, and 281.

Resource Maintenance and Protection

The following strategies would be applied to protect resources within WBRU and to ensure consistency with TVA’s Policy and Principles on the Environment.

- Any soil-disturbing activities (e.g., road construction, timber harvests, etc.) would be implemented using appropriate BMPs to prevent or minimize soil erosion.
- Cultural resources surveys would be completed prior to initiation of proposed soil-disturbing activities. Such activities would include installation of additional wildlife openings, timber harvest, road construction, and development of parking areas. Should cultural resources be identified, appropriate measures, including avoidance and possible mitigation, would be taken to ensure compliance with Section 106 of the NHPA.
- To protect gray bat (*Myotis grisescens*) food sources (emerging aquatic insects), all riparian zones and shoreline buffers around the unit would be maintained. Timber harvesting or forest clearing in habitats potentially suitable for Indiana bats (*M. sodalis*) would be restricted to the period of November 15 to March 1 when bats are hibernating elsewhere. If it is necessary to perform these activities at any other time, TVA would conduct surveys in suitable habitats to determine the presence or absence of Indiana bats at these sites. All activities associated with such surveys would be coordinated with the U.S. Fish and Wildlife Service.
- Visual buffers (50–100 feet wide) would be employed to screen timber harvest areas from public thoroughfares. These buffers would consist of “leave strips” along cutting boundaries to act as a vegetative screen. Timber harvests would be limited to a maximum of 20 acres per treatment area.
- Controlled burns would be conducted at appropriate times of the year, and under meteorological conditions that would reduce the amount of smoke generated.

Shoreline Stabilization

TVA is committed to stabilizing reservoir and tailwater shorelines across the Tennessee Valley. A number of miles of shoreline have been stabilized to date. Although this activity is a part of resource management, it has been implemented on the basis of valley-wide priorities, based on critical needs. The shoreline needs on Watts Bar will be addressed in this valley- wide assessment and not the Watts Bar Integrated Resource Management Plan.

Recreation Resources Management

It is estimated that Watts Bar receives approximately 1.9 million recreation user days per year (TVA, 2004). Watts Bar ranks below Norris, Kentucky, and Gunter'sville in total water based recreation activities. Watt's Bar Reservoir is a reservoir in transition. It is a reservoir that still has remnants of the 1950's and 1960's fish camps and small quaint marinas but it is a reservoir that appears ready for increased investment by the commercial sector with reinvestment occurring at several marinas and campgrounds around the reservoir.

According to the developed recreation inventory completed by TVA in 2004 (Unpublished) there are 29 commercial recreation establishments, 36 public areas, three church camps, and a Boy Scout camp on the reservoir. The recreation facilities at these locations are listed in the table below.

| Facilities | Commercial | Public | Church Camp | Boy Scout Camp |
|--------------------------------|-------------------|---------------------------------------------|--------------------|-----------------------|
| Wet Slips | 1,447 | | | |
| Dry Slips | 238 | | | |
| Campsite w/ electrical hookups | 666 | | | |
| Campsites without electricity | 78 | 44 (all in Rhea Springs – currently closed) | | |
| Paved boat ramps | 20 | 28 | | |
| Parking spaces | 1,080 | 616 | | |

There are additional recreation facilities such as picnic tables and pavilions, swimming beaches, rental cabins, and small motels, but the majority of the facilities are listed above. These facilities are tied closely to the use estimate provided by ROS. Of the 1.9 million recreation user days it is estimated that 900,000 user days occurred through commercial facilities, 700,000 recreation user days occurred through private residential housing, and 300,000 recreation user days occurred through public facilities.

In support of these water based recreation opportunities we would anticipate pursuing the following developed recreation activities:

- Develop and issue a request for proposal to reopen Rhea Springs campground on Parcel 266.
- Evaluate an expansion of the camping opportunities supplied currently at Fooshee Pass Campground on Parcel 9.
- Evaluate the potential to expand recreation opportunities on Parcel 240.

- Evaluate converting Parcel 5 from developed public recreation to developed commercial recreation.
- Evaluate expanding the recreation opportunities of Spring City Park Marina by developing Parcel 279.
- Continue monitoring the recreation use of the reservoir and lands as well as updating the recreation inventory.

To add diversity to the recreation experience on Watts Bar lands the following activities concerning undeveloped recreation will be pursued:

- Evaluate the feasibility of developing a mountain bike/hiking trail system on parcels 297 and 299.

Cultural Resources Management

Under any alternative, TVA will conduct the phased identification and evaluation procedures as set forth in 36 CFR § 800.4(b)(2), regulations of the Advisory Council on Historic Preservation implementing Section 106 of NHPA, in order to identify, evaluate, and assess effects on historic properties.

Under the IRM TVA would conduct the following activities for Cultural Resources Management:

- Discuss and develop plans for Interpretive Center/Signage/ and possibly trail on Huffine Island.
- Cultural resources surveys would be completed prior to initiation of proposed soil-disturbing activities. Such activities would include installation of additional wildlife openings, timber harvest, road construction, and development of parking areas. Should cultural resources be identified, appropriate measures, including avoidance and possible mitigation, would be taken to ensure compliance with Section 106 of the NHPA.

Visual Resources Management

Shorelines within WBRU are primarily forested and provide an aesthetic back drop for those participating in land and water based recreational activities. Forest types along the shoreline include hardwood, mixed forest, and pine. There are also several bluffs that are important from a visual standpoint.

Proactive timber harvests would be designed to minimize visual impacts in areas of concern, including recreation areas, along roads and travel lanes, and along reservoir shorelines. In salvage harvest situations which result from insect and disease infestation, delineation of harvest areas may not adhere to these guidelines because of danger potential and likelihood of the spread of insects and disease.

Under the IRM TVA would conduct the following activities for Visual Resources Management:

- Visual buffers (50–100 feet wide) would be employed to screen timber harvest areas from public thoroughfares. These buffers would consist of “leave strips” along cutting boundaries to act as a vegetative screen. Timber harvests would be limited to a maximum of 20 acres per treatment area.
- Regeneration harvests (clearcuts) would employ vegetative islands to lessen visual impacts.

- Create narrow openings into harvest areas to limit view from public roads, reservoir, or recreation areas.
- Regeneration harvests (clearcuts) would be designed to mimic natural openings by creating irregular shaped harvest areas.
- Adjust contiguous linear feet of harvest frontage along travel routes relative to travel speed.
- Where feasible, slash piles or windrows would be located away from travel routes and recreation areas to minimize visual impacts. In some situations, where illegal ATV abuse is anticipated, slash piles and windrows may need to be placed in these areas to prevent entry. If this is necessary, trees and shrubs would be planted as a long-term visual enhancement.

Table B-1 Activity by Parcel

| Activity Category | Task Type | Parcel(s) | Area | Task Description | Priority |
|--------------------------------------------------------|------------------------------------------------------------------------------------------------|------------------|-------------------------------------------------|------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|-----------------|
| Wildlife Mgmt (Mgmt) | Native Warm Season Grass (nwsg) establishment & enhancement-develop wildlife observation trail | 3 | Watts Bar Dam Reservation (Zone 2) | Continue and expand nwsg work with Ag license cooperator and TWRA-develop public access & trail system to feature wildlife observation | High |
| Forest Mgmt | Inventory for potential pine harvests | 7 | Fooshee Peninsula | Sample potential pine harvest areas | High |
| Forest Mgmt | Maintain Partnerships | 7 | Various | Maintain/enhance tree improvement work with local universities | High |
| Implementation of Federal Executive Orders (EO) | Migratory Bird Executive Order | 7 | Various | Explore Important Bird Area Designation with TWRA-Identify Interior Forest Components-Plan neo-tropical migrant surveys | High |
| Wildlife Mgmt | Conduct regeneration harvest to develop early succession habitat | 7 | Fooshee Peninsula | Delineate harvest boundaries, determine volumes, conduct NEPA reviews, prepare sale documents, manage sale and harvests | High |
| Wildlife Mgmt | Develop long-term mgmt plans with TWRA | 7 | Watts Bar Lake WMA & Paint Rock Wildlife Refuge | Meet with TWRA Region III personnel at least quarterly to develop long-range mgmt plans for TVA properties managed by TWRA under land-use permits for wildlife mgmt purposes | High |
| Wildlife Mgmt | Wildlife food plots/openings | 7 | Fooshee Peninsula | Develop new and maintain existing openings-linear strips-plant with nwsg, winter wheat, clover & chufa | High |
| Implementation of Federal EO(s) | Migratory Bird Executive Order | 8 | Various | Explore Important Bird Area Designation with TWRA-Identify Interior Forest Components-Plan neo-tropical migrant surveys | High |
| Natural Areas Protection & Mgmt | Site Enhancement | 8 | Fooshee Peninsula SWA | Trail Maintenance and boundary signage | High |
| Recreation Resources | Request for Proposal | 22 | Hornsby Hollow | Begin and complete obtaining new operator | High |
| Wildlife Mgmt | Develop long-term Mgmt plans with TWRA | 35 | Watts Bar Lake WMA & Paint Rock Wildlife Refuge | Meet with TWRA Region III personnel at least quarterly to develop long-range Mgmt plans for TVA properties managed by TWRA under land-use permits for wildlife mgmt purposes | High |
| Implementation of Federal EO(s) | Migratory Bird Executive Order | 46 | Various | Explore Important Bird Area Designation with TWRA-Identify Interior Forest Components-Plan neo-tropical migrant surveys | High |

| Activity Category | Task Type | Parcel(s) | Area | Task Description | Priority |
|-------------------------------------------------------------|--------------------------------------------------------------------|------------------|-------------------------------------------------|------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|-----------------|
| Wildlife Mgmt | Develop long-term Mgmt plans with TWRA | 46 | Watts Bar Lake WMA & Paint Rock Wildlife Refuge | Meet with TWRA Region III personnel at least quarterly to develop long-range mgmt plans for TVA properties managed by TWRA under land-use permits for wildlife mgmt purposes | High |
| Wildlife Mgmt | Develop long-term Mgmt plans with TWRA | 50 | Watts Bar Lake WMA & Paint Rock Wildlife Refuge | Meet with TWRA Region III personnel at least quarterly to develop long-range mgmt plans for TVA properties managed by TWRA under land-use permits for wildlife mgmt purposes | High |
| Forest Mgmt | Inventory/Sampling | 54 | Holiday Hills | Sample potential pine harvest areas | High |
| Natural Areas Protection & Mgmt | Site Assessment | 65 | Marney Bluff Habitat Protection Area (HPA) | Rare plant survey and HPA boundary refinement-Invasive, exotic plant assessment | High |
| Threatened & Endangered Species Mgmt | Habitat Protection | 65 | Marney Bluff | Work with USFWS, TWRA and backlying private land owners to protect bald eagle nest site | High |
| Implementation of Federal EO(s) | EO13112 - Invasive species control-EO 11990-Protection of Wetlands | 72 | Various | Survey and prioritize for invasive plant and encroachment control efforts | High |
| Wildlife Mgmt | Develop long-term Mgmt plans with TWRA | 72 | Watts Bar Lake WMA & Paint Rock Wildlife Refuge | Meet with TWRA Region III personnel at least quarterly to develop long-range mgmt plans for TVA properties managed by TWRA under land-use permits for wildlife mgmt purposes | High |
| Wildlife Mgmt | Develop long-term Mgmt plans with TWRA | 75 | Watts Bar Lake WMA & Paint Rock Wildlife Refuge | Meet with TWRA Region III personnel at least quarterly to develop long-range mgmt plans for TVA properties managed by TWRA under land-use permits for wildlife mgmt purposes | High |
| Protection of Public Land-Public Health & Safety | Access Improvement | 76 | Riley Creek Campground | Develop access area-gate and gravel | High |
| Wildlife Mgmt | Develop long-term Mgmt plans with TWRA | 78 | Watts Bar Lake WMA & Paint Rock Wildlife Refuge | Meet with TWRA Region III personnel at least quarterly to develop long-range mgmt plans for TVA properties managed by TWRA under land-use permits for wildlife mgmt purposes | High |
| Implementation of Federal EO(s) | EO13112 - Invasive species control-EO 11990-Protection | 82 | Various | Survey and prioritize for invasive plant and encroachment control efforts | High |

| Activity Category | Task Type | Parcel(s) | Area | Task Description | Priority |
|-------------------------------------------------------------|--------------------------------------------------------------------|------------------|-------------------------------------------------|------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|-----------------|
| | of Wetlands | | | | |
| Cultural Resources | Public Awareness-Archaeological Resources | 88 | Huffine Island | Discuss and develop plans for Interpretive Center/Signage/possibly a trail | Med-High |
| Wildlife Mgmt | Develop long-term Mgmt plans with TWRA | 88 | Watts Bar Lake WMA & Paint Rock Wildlife Refuge | Meet with TWRA Region III personnel at least quarterly to develop long-range mgmt plans for TVA properties managed by TWRA under land-use permits for wildlife mgmt purposes | High |
| Natural Areas Protection & Mgmt | Site Assessment | 91 | Marble Bluff HPA | Rare plant survey and HPA boundary refinement-Invasive, exotic plant assessment | High |
| Threatened & Endangered Species Mgmt | Species Monitoring | 91 | Marble Bluff Cave | Survey and monitor gray bat use with Heritage zoologist | High |
| Natural Areas Protection & Mgmt | Site Assessment | 94 | Polecat Creek HPA | Rare plant survey and HPA boundary refinement-Invasive, exotic plant assessment | High |
| Implementation of Federal EO(s) | 11990-Protection of Wetlands | 103 | Reservoir wide | Conduct TVARAM and rare plant surveys | High |
| Forest Mgmt | Maintain Partnerships | 130 | Various | Maintain/enhance tree improvement work with local universities | High |
| Implementation of Federal EO(s) | EO13112 - Invasive species control-EO 11990-Protection of Wetlands | 130 | Various | Survey and prioritize for invasive plant and encroachment control efforts | High |
| Protection of Public Land-Public Health & Safety | Access Improvement | 130 | Dr. Foote-Rarity Ridge | Rock placement on existing road-build gate | High |
| Implementation of Federal EO(s) | EO13112 - Invasive species control-EO 11990-Protection of Wetlands | 137 | Various | Survey and prioritize for invasive plant and encroachment control efforts | High |
| Forest Mgmt | Maintain Partnerships | 141 | Various | Maintain/enhance tree improvement work with local universities | High |
| Forest Mgmt | Maintain Partnerships | 142 | Various | Maintain/enhance tree improvement work with local universities | High |
| Implementation of Federal EO(s) | Migratory Bird Executive Order | 142 | Various | Explore Important Bird Area Designation with TWRA-Identify Interior Forest Components-Plan neo-tropical migrant surveys | High |
| Forest Mgmt | Maintain Partnerships | 143 | Various | Maintain/enhance tree improvement work | High |

| Activity Category | Task Type | Parcel(s) | Area | Task Description | Priority |
|--------------------------------------------|--------------------------------------------------------------------|-----------|------------------|-------------------------------------------------------------------------------------------------------------------------|----------|
| | | | | with local universities | |
| Implementation of Federal EO(s) | Migratory Bird Executive Order | 143 | Various | Explore Important Bird Area Designation with TWRA-Identify Interior Forest Components-Plan neo-tropical migrant surveys | High |
| Forest Mgmt | Maintain Partnerships | 144 | Various | Maintain/enhance tree improvement work with local universities | High |
| Implementation of Federal EO(s) | Migratory Bird Executive Order | 144 | Various | Explore Important Bird Area Designation with TWRA-Identify Interior Forest Components-Plan neo-tropical migrant surveys | High |
| Forest Mgmt | Maintain Partnerships | 145 | Various | Maintain/enhance tree improvement work with local universities | High |
| Implementation of Federal EO(s) | Migratory Bird Executive Order | 145 | Various | Explore Important Bird Area Designation with TWRA-Identify Interior Forest Components-Plan neo-tropical migrant surveys | High |
| Implementation of Federal EO(s) | Migratory Bird Executive Order | 146 | Various | Explore Important Bird Area Designation with TWRA-Identify Interior Forest Components-Plan neo-tropical migrant surveys | High |
| Natural Areas Protection & Mgmt | Site Assessment | 146 | Grassy Creek HPA | Rare plant survey and HPA boundary refinement-Invasive, exotic plant assessment | High |
| Implementation of Federal EO(s) | Migratory Bird Executive Order | 147 | Various | Explore Important Bird Area Designation with TWRA-Identify Interior Forest Components-Plan neo-tropical migrant surveys | High |
| Implementation of Federal EO(s) | Migratory Bird Executive Order | 148 | Various | Explore Important Bird Area Designation with TWRA-Identify Interior Forest Components-Plan neo-tropical migrant surveys | High |
| Natural Areas Protection & Mgmt | Site Assessment | 152 | Sugar Grove HPA | Rare plant survey and HPA boundary refinement-Invasive, exotic plant assessment | High |
| Implementation of Federal EO(s) | EO13112 - Invasive species control-EO 11990-Protection of Wetlands | 159 | Various | Survey and prioritize for invasive plant and encroachment control efforts | High |
| Implementation of Federal EO(s) | 11990-Protection of Wetlands | 160 | Reservoir wide | Conduct TVARAM and rare plant surveys | High |
| Implementation of Federal EO(s) | EO13112 - Invasive species control-EO 11990-Protection of Wetlands | 161 | Various | Survey and prioritize for invasive plant and encroachment control efforts | High |

| Activity Category | Task Type | Parcel(s) | Area | Task Description | Priority |
|-------------------------------------------------------------|--------------------------------------------------------------------|------------------|-----------------------|---------------------------------------------------------------------------------|-----------------|
| Protection of Public Land-Public Health & Safety | Access Control | 165 | Mouth of Little Emory | Construct fence | High |
| Implementation of Federal EO(s) | 11990-Protection of Wetlands | 166 | Reservoir wide | Conduct TVARAM and rare plant surveys | Medium |
| Implementation of Federal EO(s) | EO13112 - Invasive species control-EO 11990-Protection of Wetlands | 166 | Various | Survey and prioritize for invasive plant and encroachment control efforts | High |
| Implementation of Federal EO(s) | EO13112 - Invasive species control-EO 11990-Protection of Wetlands | 168 | Various | Survey and prioritize for invasive plant and encroachment control efforts | High |
| Implementation of Federal EO(s) | 11990-Protection of Wetlands | 169 | Reservoir wide | Conduct TVARAM and rare plant surveys | Medium |
| Protection of Public Land-Public Health & Safety | Animal Damage Control | 173 | Bullard Branch | Beaver population control-to protect Harriman sewer lift station | High |
| Implementation of Federal EO(s) | 11990-Protection of Wetlands | 183 | Reservoir wide | Conduct TVARAM and rare plant surveys | High |
| Implementation of Federal EO(s) | 11990-Protection of Wetlands | 185 | Reservoir wide | Conduct TVARAM and rare plant surveys | High |
| Implementation of Federal EO(s) | EO13112 - Invasive species control-EO 11990-Protection of Wetlands | 186 | Various | Survey and prioritize for invasive plant and encroachment control efforts | High |
| Implementation of Federal EO(s) | EO13112 - Invasive species control-EO 11990-Protection of Wetlands | 187 | Various | Survey and prioritize for invasive plant and encroachment control efforts | High |
| Implementation of Federal EO(s) | 11990-Protection of Wetlands | 188 | Reservoir wide | Conduct TVARAM and rare plant surveys | High |
| Implementation of Federal EO(s) | EO13112 - Invasive species control-EO 11990-Protection of Wetlands | 188 | Various | Survey and prioritize for invasive plant and encroachment control efforts | High |
| Implementation of Federal EO(s) | EO13112 - Invasive species control-EO 11990-Protection of Wetlands | 193 | Various | Survey and prioritize for invasive plant and encroachment control efforts | High |
| Natural Areas Protection & Mgmt | Site Assessment | 194 | Rayburn Bridge HPA | Rare plant survey and HPA boundary refinement-Invasive, exotic plant assessment | High |

| Activity Category | Task Type | Parcel(s) | Area | Task Description | Priority |
|-------------------------------------------------------------|--------------------------------------------------------------------|------------------|----------------------------------------------------------|------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|-----------------|
| Natural Areas Protection & Mgmt | Site Assessment | 196 | Stowe Bluff HPA | Rare plant survey and HPA boundary refinement-Invasive, exotic plant assessment | High |
| Protection of Public Land-Public Health & Safety | Access Improvement | 223 | Finger's Area | Rock placement on existing road | High |
| Wildlife Mgmt | Grassland habitat development-potential QU partnership | 223 | Fingers Area | Establish NWSG stands on approximately 15 acres of prior grazing/hay land | High |
| Protection of Public Land-Public Health & Safety | Access Improvement | 224 | Finger's Area | Rock placement on existing road | High |
| Wildlife Mgmt | Grassland habitat development-potential QU partnership | 224 | Fingers Area | Establish NWSG stands on approximately 15 acres of prior grazing/hay land | High |
| Implementation of Federal EO(s) | Migratory Bird Executive Order | 227 | Half Moon Island area and scattered islands on reservoir | Protect Islands with high wading bird use from erosion-stabilize with native plantings and/or riprap. | High |
| Wildlife Mgmt | Develop long-term Mgmt plans with TWRA | 227 | Watts Bar Lake WMA & Paint Rock Wildlife Refuge | Meet with TWRA Region III personnel at least quarterly to develop long-range Mgmt plans for TVA properties managed by TWRA under land-use permits for wildlife Mgmt purposes | High |
| Implementation of Federal EO(s) | 11990-Protection of Wetlands | 233 | Reservoir wide | Conduct TVARAM and rare plant surveys | Medium |
| Implementation of Federal EO(s) | EO13112 - Invasive species control-EO 11990-Protection of Wetlands | 233 | Various | Survey and prioritize for invasive plant and encroachment control efforts | High |
| Protection of Public Land-Public Health & Safety | Access Control | 233 | White's Creek | Install gate and berms/cable to control vehicular access | High |
| Threatened & Endangered Species Mgmt | Species Monitoring | 233 | Mouth of Whites Creek | Survey habitat and explore potential for establishment of Virginia spiraea and Cumberland rosemary | Med-High |
| Natural Areas Protection & Mgmt | Trail Construction | 237 | Whites Creek Addition | Trail construction with partners-TCWP | High |
| Natural Areas Protection & Mgmt | Site Enhancement | 238 | Whites Creek Small Wild Area | Trail maintenance with TCWP-coordinate transfer of Bowater Property and addition to SWA | High |

| Activity Category | Task Type | Parcel(s) | Area | Task Description | Priority |
|-------------------------------------------------------------|--------------------------------------------------------------------|------------------|-------------------------------------------------|------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|-----------------|
| Implementation of Federal EO(s) | Migratory Bird Executive Order | 254 | Various | Explore Important Bird Area Designation with TWRA-Identify Interior Forest Components-Plan neo-tropical migrant surveys | High |
| Wildlife Mgmt | Develop long-term Mgmt plans with TWRA | 254 | Watts Bar Lake WMA & Paint Rock Wildlife Refuge | Meet with TWRA Region III personnel at least quarterly to develop long-range Mgmt plans for TVA properties managed by TWRA under land-use permits for wildlife Mgmt purposes | High |
| Recreation Resources | Request for Proposal | 266 | Rhea Springs | Follow up from 2005 | High |
| Implementation of Federal EO(s) | EO13112 - Invasive species control-EO 11990-Protection of Wetlands | 267 | Various | Survey and prioritize for invasive plant and encroachment control efforts | High |
| Wildlife Mgmt | Waterfowl Habitat Development-Ducks Unlimited-TWRA partnership | 267 | Muddy Creek Embayment and wetlands | Survey & examine area with TWRA & DU personnel to determine potential for Joint Venture Habitat Development possibilities | High |
| Implementation of Federal EO(s) | 11990-Protection of Wetlands | 268 | Reservoir wide | Conduct TVARAM and rare plant surveys | High |
| Implementation of Federal EO(s) | EO13112 - Invasive species control-EO 11990-Protection of Wetlands | 268 | Various | Survey and prioritize for invasive plant and encroachment control efforts | High |
| Wildlife Mgmt | Waterfowl Habitat Development-Ducks Unlimited-TWRA partnership | 268 | Muddy Creek Embayment and wetlands | Survey & examine area with TWRA & DU personnel to determine potential for Joint Venture Habitat Development possibilities | High |
| Wildlife Mgmt | Develop long-term mgmt plans with TWRA | 276 | Watts Bar Lake WMA & Paint Rock Wildlife Refuge | Meet with TWRA Region III personnel at least quarterly to develop long-range Mgmt plans for TVA properties managed by TWRA under land-use permits for wildlife Mgmt purposes | High |
| Implementation of Federal EO(s) | 11990-Protection of Wetlands | 281 | Reservoir wide | Conduct TVARAM and rare plant surveys | Medium |
| Implementation of Federal EO(s) | EO13112 - Invasive species control-EO 11990-Protection of Wetlands | 281 | Various | Survey and prioritize for invasive plant and encroachment control efforts | High |
| Protection of Public Land-Public Health & Safety | Access Improvement | 283 | Moffett | Develop parking area and gate installation | High |

| Activity Category | Task Type | Parcel(s) | Area | Task Description | Priority |
|-------------------------------------------------------------|----------------------------------------|------------------|-------------------------------------------------|------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|-----------------|
| Forest Mgmt | Inventory/Sampling | 285 | Lowe Branch | Sample regeneration in pine harvest areas-invasive plant sampling | High |
| Protection of Public Land-Public Health & Safety | Access Improvement | 285 | Miller/Peppers | Construct trail/install gate | High |
| Threatened & Endangered Species Mgmt | Habitat Protection | 285 | Piney River | Work with USFWS, TWRA and backlying private land owners to protect bald eagle nest site | High |
| Wildlife Mgmt | Develop long-term Mgmt plans with TWRA | 286 | Watts Bar Lake WMA & Paint Rock Wildlife Refuge | Meet with TWRA Region III personnel at least quarterly to develop long-range Mgmt plans for TVA properties managed by TWRA under land-use permits for wildlife Mgmt purposes | High |
| Forest Mgmt | Inventory/Sampling | 291 | Lowe Branch | Sample regeneration in pine harvest areas-invasive plant sampling | High |
| Implementation of Federal EO(s) | Migratory Bird Executive Order | 295 | Various | Explore Important Bird Area Designation with TWRA-Identify Interior Forest Components-Plan neo-tropical migrant surveys | High |
| Implementation of Federal EO(s) | Migratory Bird Executive Order | 296 | Various | Explore Important Bird Area Designation with TWRA-Identify Interior Forest Components-Plan neo-tropical migrant surveys | High |
| Forest Mgmt | Invasive plant control | 297 | Lowe Branch | Herbicide treatment on kudzu | High/Med |
| Implementation of Federal EO(s) | Migratory Bird Executive Order | 297 | Various | Explore Important Bird Area Designation with TWRA-Identify Interior Forest Components-Plan neo-tropical migrant surveys | High |
| Wildlife Mgmt | Early successional habitat Mgmt | 297 | Lowe Branch-"the pines" | Maintain linear food plots and fire breaks-conduct controlled burns with TDF-QU partnership | High |
| Forest Mgmt | Invasive plant control | 298 | Lowe Branch | Herbicide treatment on kudzu | High/Med |
| Implementation of Federal EO(s) | Migratory Bird Executive Order | 298 | Various | Explore Important Bird Area Designation with TWRA-Identify Interior Forest Components-Plan neo-tropical migrant surveys | High |
| Forest Mgmt | Invasive plant control | 299 | Lowe Branch | Herbicide treatment on kudzu | High/Med |
| Forest Mgmt | Inventory/Sampling | 299 | Lowe Branch | Sample regeneration in pine harvest areas-invasive plant sampling | High |

| Activity Category | Task Type | Parcel(s) | Area | Task Description | Priority |
|-------------------------------------------------------------|-------------------------------------|---------------------------------|---------------------------------|----------------------------------------------------------------------------------------------------------------------------------------------------|-----------------|
| Implementation of Federal EO(s) | Migratory Bird Executive Order | 299 | Various | Explore Important Bird Area Designation with TWRA-Identify Interior Forest Components-Plan neo-tropical migrant surveys | High |
| Wildlife Mgmt | Early successional habitat Mgmt | 299 | Lowe Branch-"the pines" | Maintain linear food plots and fire breaks-conduct controlled burns with TDF-QU partnership | High |
| Natural Areas Protection & Mgmt | Trail Construction | 12-26 | Whites Creek Addition | Trail construction with partners-TCWP | High |
| Threatened & Endangered Species Mgmt | Habitat Protection | Near 12-6 and 25 | Sensabaugh Cave | In cooperation with USFWS, explore protection measures for cave to protect gray bat habitat | High |
| Recreation Resources | Evaluate Informal Recreation | Reservoir-wide (all Zone 3 & 4) | Reservoir-wide (all Zone 3 & 4) | Evaluate Informal Recreation | Medium |
| Forest Mgmt | Enhance partnerships with FS/others | Various | Various | Develop, maintain and enhance partnerships with Federal and State agencies-conduct inventories for forest protection-insect & disease surveillance | High |
| Protection of Public Land-Public Health & Safety | Nuisance Animal Control | Various | Various | Respond to nuisance animal issues | High |
| Forest Mgmt | Wildfire Suppression | Various-reservoir wide | Reservoir wide | Work with TDF to develop wildfire suppression plan | High |

Table B-2 Five Year List of Activities

| Fiscal Year | Activity Category | Task Type | Parcel(s) | Area | Task Description |
|--------------------|-------------------------------------------------|--------------------------------------------------------------------|---------------------------------------------------------------|----------------------------------------------------------|------------------------------------------------------------------------------------------------------------------------|
| 2006 | Implementation of Federal Executive Orders (EO) | EO13112 - Invasive species control-EO 11990-Protection of Wetlands | 281,267,268,233,72,82,188,186,187,193,130,159,161,137,166,168 | Various | Survey and prioritize for invasive plant and encroachment control efforts |
| 2006 | Implementation of Federal Executive Orders (EO) | Migratory Bird Executive Order | 227 and other small islands | Half Moon Island area and scattered islands on reservoir | Protect Islands with high wading bird use from erosion-stabilize with native plantings and/or riprap. |
| 2006 | Implementation of Federal Executive Orders (EO) | Migratory Bird Executive Order | 295-299,7-8,254,46,142-148 | Various | Explore Important Bird Area Designation with TWRA-Identify Interior Forest Components-Plan neotropical migrant surveys |
| 2006 | Threatened & Endangered Species Management | Habitat Protection | 65 | Marney Bluff | Work with USFWS, TWRA and backlying private land owners to protect bald eagle nest site |
| 2006 | Threatened & Endangered Species Management | Habitat Protection | 285 | Piney River | Work with USFWS, TWRA and backlying private land owners to protect bald eagle nest site |
| 2006 | Threatened & Endangered Species Management | Habitat Protection | Near 12-6 and 25 | Sensabaugh Cave | In cooperation with USFWS, explore protection measures for cave to protect gray bat habitat |
| 2006 | Threatened & Endangered Species Management | Species Monitoring | 233 | Mouth of Whites Creek | Survey habitat and explore potential for establishment of Virginia spiraea and Cumberland rosemary |
| 2006 | Threatened & Endangered Species Management | Species Monitoring | 91 | Marble Bluff Cave | Survey and monitor gray bat use with Heritage zoologist |
| 2006 | Natural Areas Protection & Management | Site Enhancement | 8 | Fooshee Peninsula Small Wild Area | Trail Maintenance and boundary signage |

| Fiscal Year | Activity Category | Task Type | Parcel(s) | Area | Task Description |
|--------------------|--------------------------------------------------|--------------------|------------------|------------------------------|-----------------------------------------------------------------------------------------------------|
| 2006 | Natural Areas Protection & Management | Site Enhancement | 238 | Whites Creek Small Wild Area | Trail maintenance with TCWP-coordinate transfer of Bowater Property and addition to SWA |
| 2006 | Natural Areas Protection & Management | Trail Construction | 12-26 & 237 | Whites Creek Addition | Trail construction with partners-TCWP |
| 2006 | Natural Areas Protection & Management | Site Assessment | 65 | Marney Bluff HPA | Rare plant survey and Habitat Protection Area boundary refinement-Invasive, exotic plant assessment |
| 2006 | Natural Areas Protection & Management | Site Assessment | 196 | Stowe Bluff HPA | Rare plant survey and Habitat Protection Area boundary refinement-Invasive, exotic plant assessment |
| 2006 | Natural Areas Protection & Management | Site Assessment | 194 | Rayburn Bridge HPA | Rare plant survey and Habitat Protection Area boundary refinement-Invasive, exotic plant assessment |
| 2006 | Natural Areas Protection & Management | Site Assessment | 152 | Sugar Grove HPA | Rare plant survey and Habitat Protection Area boundary refinement-Invasive, exotic plant assessment |
| 2006 | Natural Areas Protection & Management | Site Assessment | 146 | Grassy Creek HPA | Rare plant survey and Habitat Protection Area boundary refinement-Invasive, exotic plant assessment |
| 2006 | Natural Areas Protection & Management | Site Assessment | 91 | Marble Bluff HPA | Rare plant survey and Habitat Protection Area boundary refinement-Invasive, exotic plant assessment |
| 2006 | Natural Areas Protection & Management | Site Assessment | 94 | Polecat Creek HPA | Rare plant survey and Habitat Protection Area boundary refinement-Invasive, exotic plant assessment |
| 2006 | Protection of Public Land-Public Health & Safety | Access Improvement | 283 | Moffett | Develop parking area and gate installation |

| Fiscal Year | Activity Category | Task Type | Parcel(s) | Area | Task Description |
|--------------------|--------------------------------------------------|---------------------------------------|--------------------------|------------------------|----------------------------------------------------------------------------------------------------------------------------------------------------|
| 2006 | Protection of Public Land-Public Health & Safety | Access Improvement | 285 | Miller/Peppers | Construct trail/install gate |
| 2006 | Protection of Public Land-Public Health & Safety | Access Control | 233 | White's Creek | Install gate and berms/cable to control vehicular access |
| 2006 | Protection of Public Land-Public Health & Safety | Access Improvement | 223,224 | Finger's Area | Rock placement on existing road |
| 2006 | Protection of Public Land-Public Health & Safety | Access Improvement | 76 | Riley Creek Campground | Develop access area-gate and gravel |
| 2006 | Protection of Public Land-Public Health & Safety | Access Improvement | 130 | Dr. Foote-Rarity Ridge | Rock placement on existing road-build gate |
| 2006 | Protection of Public Land-Public Health & Safety | Access Control | 165 | Mouth of Little Emory | Construct fence |
| 2006 | Protection of Public Land-Public Health & Safety | Animal Damage Control | 173 | Bullard Branch | Beaver population control-to protect Harriman sewer lift station |
| 2006 | Protection of Public Land-Public Health & Safety | Nuisance Animal Control | Various | Various | Respond to nuisance animal issues |
| 2006 | Forest Management | Inventory/Sampling | 285,291 &299 | Lowe Branch | Sample regeneration in pine harvest areas-invasive plant sampling |
| 2006 | Forest Management | Inventory for potential pine harvests | 7 | Fooshee Peninsula | Sample potential pine harvest areas |
| 2006 | Forest Management | Inventory/Sampling | 54 | Holiday Hills | Sample potential pine harvest areas |
| 2006 | Forest Management | Invasive plant control | 297-299 | Lowe Branch | Herbicide treatment on kudzu |
| 2006 | Forest Management | Enhance partnerships with FS/others | Various | Various | Develop, maintain and enhance partnerships with Federal and State agencies-conduct inventories for forest protection-insect & disease surveillance |
| 2006 | Forest Management | Maintain Partnerships | 7,130,141,142-145,others | Various | Maintain/enhance tree improvement work with local |

| Fiscal Year | Activity Category | Task Type | Parcel(s) | Area | Task Description |
|--------------------|--------------------------|-----------------------------------------------------------------------------------------|---------------------------------------|----------------------------------------------------------------------|------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| | | | | | universities |
| 2006 | Wildlife Management | Develop long-term management plans with TWRA | 7,35,50,46,72,75,78,88,227,254286&276 | Watts Bar Lake Wildlife Management Area & Paint Rock Wildlife Refuge | Meet with TWRA Region III personnel at least quarterly to develop long-range management plans for TVA properties managed by TWRA under land-use permits for wildlife management purposes |
| 2006 | Wildlife Management | Conduct regeneration harvest to develop early succession habitat | 7 | Fooshee Peninsula | Delineate harvest boundaries, determine volumes, conduct NEPA reviews, prepare sale documents, manage sale and harvests |
| 2006 | Wildlife Management | Native Warm Season Grass establishment & enhancement-develop wildlife observation trail | 3 | Watts Bar Dam Reservation (Zone 2) | Continue and expand nwsg work with Ag license cooperator and TWRA-develop public access & trail system to feature wildlife observation |
| 2006 | Wildlife Management | Wildlife food plots/openings | 7 | Fooshee Peninsula | Develop new and maintain existing openings-linear strips-plant with nwsg, winter wheat, clover & chufa |
| 2006 | Wildlife Management | Grassland habitat development-potential QU partnership | 223,224 | Fingers Area | Establish NWSG stands on approximately 15 acres of prior grazing/hay land |
| 2006 | Wildlife Management | Early successional habitat management | 297,299 | Lowe Branch-"the pines" | Maintain linear food plots and fire breaks-conduct controlled burns with TDF-QU partnership |
| 2006 | Wildlife Management | Waterfowl Habitat Development-Ducks Unlimited-TWRA partnership | 268 & portions of 267 | Muddy Creek Embayment and wetlands | Survey & examine area with TWRA & DU personnel to determine potential for Joint Venture Habitat Development |

| Fiscal Year | Activity Category | Task Type | Parcel(s) | Area | Task Description |
|--------------------|--------------------------------------------------|-------------------------------------------|------------------|----------------|-----------------------------------------------------------------------------------------|
| | | | | | possibilities |
| 2006 | Cultural Resources | Public Awareness-Archaeological Resources | 88 | Huffine Island | Discuss and develop plans for Interpretive Center/Signage/possibly a trail |
| 2006 | Protection of Public Land-Public Health & Safety | Trash and Litter cleanup | Reservoir wide | Various | Clean up trash and litter at high priority sites on Watts Bar |
| 2006 | Recreation | Request for Proposal | 266 | Rhea Springs | Follow up from 2005 |
| 2006 | Recreation | Request for Proposal | 22 | Hornsby Hollow | Begin and complete obtaining new operator |
| 2006 | Recreation | Evaluate Informal Recreation | all 3's & 4's | Reservoir-wide | Evaluate Informal Recreation |
| 2007 | Natural Areas Protection & Management | Monitoring and protection | | | Monitor natural areas and implement activities as needed to protect sensitive resources |
| 2007 | Protection of Public Land-Public Health & Safety | Property delineation | | | Inspect and Mark Boundary |
| 2007 | Implementation of Federal Executive Orders (EO) | Monitoring and protection | | | Monitor wetlands and implement protection measures (EO-11990) |
| 2007 | Implementation of Federal Executive Orders (EO) | Monitoring and protection | | | Comply with Migratory Bird Executive Order (EO-13186) |
| 2007 | Implementation of Federal Executive Orders (EO) | Monitoring and treatment | | | Monitor exotic species populations and treat where needed (EO-13112) |
| 2007 | Wildlife Management | Habitat maintenance | | | Maintain Wildlife Openings |
| 2007 | Wildlife Management | Habitat maintenance | | | Maintain Road Openings |
| 2007 | Wildlife Management | Land administration | | | Administer Agricultural license |

| Fiscal Year | Activity Category | Task Type | Parcel(s) | Area | Task Description |
|--------------------|--------------------------------------------------|---------------------------|------------------|-------------|-----------------------------------------------------------------------------------------|
| 2007 | Protection of Public Land-Public Health & Safety | Trash and Litter cleanup | Reservoir wide | Various | Clean up trash and litter at high priority sites on Watts Bar |
| 2007 | Integrated Resource Management | Monitot Implementation | Reservoir wide | Various | Monitor previously implemented activities on Watts Bar Resource Unit |
| 2008 | Natural Areas Protection & Management | Monitoring and protection | | | Monitor natural areas and implement activities as needed to protect sensitive resources |
| 2008 | Protection of Public Land-Public Health & Safety | Property delineation | | | Inspect and Mark Boundary |
| 2008 | Implementation of Federal Executive Orders (EO) | Monitoring and protection | | | Monitor wetlands and implement protection measures |
| 2008 | Implementation of Federal Executive Orders (EO) | Monitoring and protection | | | Comply with Migratory Bird Executive Order |
| 2008 | Implementation of Federal Executive Orders (EO) | Monitoring and treatment | | | Monitor exotic species populations and treat where needed |
| 2008 | Wildlife Management | Habitat maintenance | | | Maintain Wildlife Openings |
| 2008 | Wildlife Management | Habitat maintenance | | | Maintain Road Openings |
| 2008 | Wildlife Management | Land administration | | | Administer Agricultural license |
| 2008 | Protection of Public Land-Public Health & Safety | Trash and Litter cleanup | Reservoir wide | Various | Clean up trash and litter at high priority sites on Watts Bar |
| 2008 | Integrated Resource Management | Monitot Implementation | Reservoir wide | Various | Monitor previously implemented activities on Watts Bar Resource Unit |
| 2009 | Natural Areas Protection & Management | Monitoring and protection | | | Monitor natural areas and implement activities as needed to protect sensitive resources |

| Fiscal Year | Activity Category | Task Type | Parcel(s) | Area | Task Description |
|--------------------|--------------------------------------------------|---------------------------|------------------|-------------|-----------------------------------------------------------------------------------------|
| 2009 | Protection of Public Land-Public Health & Safety | Property delineation | | | Inspect and Mark Boundary |
| 2009 | Implementation of Federal Executive Orders (EO) | Monitoring and protection | | | Monitor wetlands and implement protection measures |
| 2009 | Implementation of Federal Executive Orders (EO) | Monitoring and protection | | | Comply with Migratory Bird Executive Order |
| 2009 | Implementation of Federal Executive Orders (EO) | Monitoring and treatment | | | Monitor exotic species populations and treat where needed |
| 2009 | Wildlife Management | Habitat maintenance | | | Maintain Wildlife Openings |
| 2009 | Wildlife Management | Habitat maintenance | | | Maintain Road Openings |
| 2009 | Wildlife Management | Land administration | | | Administer Agricultural license |
| 2009 | Protection of Public Land-Public Health & Safety | Trash and Litter cleanup | Reservoir wide | Various | Clean up trash and litter at high priority sites on Watts Bar |
| 2009 | Integrated Resource Management | Monitot Implementation | Reservoir wide | Various | Monitor previously implemented activities on Watts Bar Resource Unit |
| 2010 | Natural Areas Protection & Management | Monitoring and protection | | | Monitor natural areas and implement activities as needed to protect sensitive resources |
| 2010 | Protection of Public Land-Public Health & Safety | Property delineation | | | Inspect and Mark Boundary |
| 2010 | Implementation of Federal Executive Orders (EO) | Monitoring and protection | | | Monitor wetlands and implement protection measures |
| 2010 | Implementation of Federal Executive Orders (EO) | Monitoring and protection | | | Comply with Migratory Bird Executive Order |
| 2010 | Implementation of Federal Executive Orders (EO) | Monitoring and treatment | | | Monitor exotic species populations and treat where needed |

Appendix B

| Fiscal Year | Activity Category | Task Type | Parcel(s) | Area | Task Description |
|--------------------|--------------------------------------------------|--------------------------|------------------|-------------|----------------------------------------------------------------------|
| 2010 | Wildlife Management | Habitat maintenance | | | Maintain Wildlife Openings |
| 2010 | Wildlife Management | Habitat maintenance | | | Maintain Road Openings |
| 2010 | Wildlife Management | Land administration | | | Administer Agricultural license |
| 2010 | Protection of Public Land-Public Health & Safety | Trash and Litter cleanup | Reservoir wide | Various | Clean up trash and litter at high priority sites on Watts Bar |
| 2010 | Integrated Resource Management | Monitot Implementation | Reservoir wide | Various | Monitor previously implemented activities on Watts Bar Resource Unit |

TVARAM Field Form Quantitative Rating

Site:

Rater(s):

Date:

max 6 pts

subtotal

Metric 1. Wetland Area (size)

Notes: BR/CM = adjusted points for Blue Ridge and Cumberland Mountains. If an open water body (excluding aquatic beds and seasonal mudflats) is >20 acres (8 ha), then add only 0.5 acre (0.2 ha) of it to the wetland size for Metric 1.

Select one size class and assign score

- ☐ >50 acres (>20.2 ha) (6 pts)
☐ 25 to <50 acres (10.1 to <20.2 ha) (5) [BR/CM (6)]
☐ 10 to <25 acres (4 to <10.1 ha) (4) [BR/CM (6)]
☐ 3 to <10 acres (1.2 to <4 ha) (3) [BR/CM (5)]
☐ 0.3 to <3 acres (0.1 to <1.2 ha) (2) [BR/CM (3)]
☐ 0.1 to <0.3 acre (0.04 to <0.1 ha) (1) [BR/CM (2)]
☐ <0.1 acre (0.04 ha) (0)

Sources/assumptions for size estimate (list)

max 14 pts

subtotal

Metric 2. Upland Buffers and Surrounding Land Use

2a. Calculate average buffer width. Select only one and assign score. Do not double check.

- ☐ WIDE. Buffers average 50 m (164 ft) or more around wetland perimeter (7)
☐ MEDIUM. Buffers average 25 m to <50 m (82 to <164 ft) around wetland perimeter (4)
☐ NARROW. Buffers average 10 m to <25 m (32 ft to <82 ft) around wetland perimeter (1)
☐ VERY NARROW. Buffers average <10 m (<32 ft) around wetland perimeter (0)

2b. Intensity of surrounding land use. Select one or double check and average.

- ☐ VERY LOW. 2nd growth or older forest, prairie, savannah, wildlife area, etc. (7)
☐ LOW. Old field (>10 years), shrubland, young 2nd growth forest (5)
☐ MODERATELY HIGH. Residential, fenced pasture, park, conservation tillage, new fallow field (3)
☐ HIGH. Urban, industrial, open pasture, row cropping, mining, construction (1)

max 30 pts

subtotal

Metric 3. Hydrology

3a. Sources of water. Score all that apply.

- ☐ High pH groundwater (5)
☐ Other groundwater (3) [BR/CM (5)]
☐ Precipitation (1) [unless BR/CM primary source (5)]
☐ Seasonal/intermittent surface water (3)
☐ Perennial surface water (lake or stream) (5)

3c. Maximum water depth. Select only one and assign score.

- ☐ >7 m (27.6 in.) (3)
☐ 0.4 to 0.7 m (16 to 27.6 in.) (2) [BR/CM (3)]
☐ <0.4 m (<16 in.) (1) [BR/CM 0.15 to 0.4 m (6 to <16 in.) (2)]

3e. Modifications to natural hydrologic regime. Score one or double check and average.

- ☐ None or none apparent (12)
☐ Recovered (7)
☐ Recovering (3)
☐ Recent or no recovery (1)

3b. Connectivity. Score all that apply.

- ☐ 100-year floodplain (1)
☐ Between streamlake and other human use (1)
☐ Part of wetland/upland (e.g., forest), complex (1)
☐ Part of riparian or upland corridor (1)

3d. Duration inundation/saturation. Score one or dbl. check & avg.

- ☐ Semi- to permanently inundated/saturated (4)
☐ Regularly inundated/saturated (3) [BR/CM (4)]
☐ Seasonally inundated (2) [BR/CM (4)]
☐ Seasonally saturated in upper 30 cm (12 in.) (1) [BR/CM (2)]

Check all disturbances observed

- ☐ ditch
☐ tile (including culvert)
☐ dike
☐ weir
☐ stormwater input
☐ point source (nonstormwater)
☐ filling/grading
☐ road bed/RR track
☐ dredging
☐ other _____

max 25 pts

subtotal

Metric 4. Habitat Alteration and Development

4a. Substrate disturbance. Score one or double check and average.

- ☐ None or none apparent (4)
☐ Recovered (3)
☐ Recovering (2)
☐ Recent or no recovery (1)

4b. Habitat development. Select only one and assign score.

- ☐ Excellent (7)
☐ Very good (6)
☐ Good (5)
☐ Moderately good (4)
☐ Fair (3)
☐ Poor to fair (2)
☐ Poor (1)

4c. Habitat alteration. Score one or double check and average.

- ☐ None or none apparent (9)
☐ Recovered (6)
☐ Recovering (3)
☐ Recent or no recovery (1)

Check all disturbances observed

- ☐ mowing
☐ grazing
☐ clearcutting
☐ selective cutting
☐ farming
☐ toxic pollutants
☐ shrub/sapling removal
☐ herbaceous/aquatic bed removal
☐ woody debris removal
☐ sedimentation
☐ dredging
☐ nutrient enrichment

subtotal this page

Last revised 2885-83-18

TVARAM Field Form Quantitative Rating

| | | |
|-------|-----------|-------|
| Site: | Rater(s): | Date: |
|-------|-----------|-------|

subtotal previous page

max 10 pts. subtotal

Metric 5. Special Wetlands

*If the documented raw score for Metric 5 is 30 points or higher, the site is automatically considered a Category 3 wetland.

Select all that apply. Where multiple values apply in row, score row as single feature with highest point value. Provide documentation for each selection (photos, checklists, maps, resource specialist concurrence, data sources, references, etc.).

- ☐ Bog, fen, wet prairie (10); acidophilic veg., mossy substrate >10 sq.m, sphagnum or other moss (5); musk, organic soil layer (3)
- ☐ Assoc. forest (wet. &/or ad. upland) incl. >0.25 acre (0.1 ha); old growth (10); mature >18 in. (45 cm) dbh (5) [exclude pine plantation]
- ☐ Sensitive geologic feature such as spring/seep, sink, losing/underground stream, cave, waterfall, rock outcrop/cliff (5)
- ☐ Vernal pool (5); isolated, perched, or slope wetland (4); headwater wetland [1st order perennial or above] (3)
- ☐ Island wetland >0.1 acre (0.04 ha) in reservoir, river, or perennial water >6 ft (2 m) deep (5)
- ☐ Braided channel or floodplain/terrace depressions (floodplain pool, slough, oxbow, meander scar, etc.) (3)
- ☐ Gross morph. adapt. in >5 trees >10 in. (25 cm) dbh; buttress, multitrunked, stilted, shallow rootship-up, or pneumatophores (3)
- ☐ Ecological community with global rank (NatureServe): G1*(10), G2*(5), G3*(3) [use higher rank where mixed rank or qualifier]
- ☐ Known occurrence state/federal threatened/endangered species (10); other rare species with global rank G1*(10), G2*(5), G3*(3) [use higher rank where mixed rank or qualifier] [exclude records which are only "historic"]
- ☐ Superior/enhanced habitat/use: migratory songbird/waterfowl (5); in-reservoir buttonbush (4); other fish/wildlife management designation (3)
- ☐ Cat. 1 (very low quality): <1 acre (0.4 ha) AND EITHER >80% cover of invasives OR nonvegetated on mined/excavated land (<10)

max 20 pts. subtotal

Metric 6. Plant Communities, Interspersion, Microtopography

6a. Wetland vegetation communities. Score all present using 0 to 3 scale.

- ☐ Aquatic bed
- ☐ Emergent
- ☐ Shrub
- ☐ Forest
- ☐ Mudflats
- ☐ Open water <20 acres (8 ha)
- ☐ Moss/lichen. Other _____

6b. Horizontal (plan view) interspersion. Select only one.

- ☐ High (5)
- ☐ Moderately high (4) [BR/CM (5)]
- ☐ Moderate (3) [BR/CM (5)]
- ☐ Moderately low (2) [BR/CM (3)]
- ☐ Low (1) [BR/CM (2)]
- ☐ None (0)

6c. Coverage of invasive plants.

- Add or deduct points for coverage.
- ☐ Extensive >75% cover (-5)
 - ☐ Moderate 25-75% cover (-3)
 - ☐ Sparse 5-25% cover (-1)
 - ☐ Nearly absent <5% cover (0)
 - ☐ Absent (1)

6d. Microtopography.

- Score all present using 0 to 3 scale.
- ☐ Vegetated hummocks/mussocks
 - ☐ Coarse woody debris >15 cm (6 in.)
 - ☐ Standing dead >25 cm (10 in.) dbh
 - ☐ Amphibian breeding pools

Vegetation Community Cover Scale

- 0 = Absent or <0.1 ha (0.25 acre) contiguous acre [For BR/CM <0.04 ha (0.1 acre)]
- 1 = Present and either comprises a small part of wetland's vegetation and is of moderate quality, or comprises a significant part but is of low quality
- 2 = Present and either comprises a significant part of wetland's vegetation and is of moderate quality, or comprises a small part and is of high quality
- 3 = Present and comprises a significant part or more of wetland's vegetation and is of high quality

Narrative Description of Vegetation Quality

- low = Low species diversity &/or dominance of nonnative or disturbance tolerant native species
- mod = Native species are dominant component of the vegetation, although nonnative &/or disturbance tolerant native species can also be present, and species diversity moderate to moderately high, but generally w/o presence of rare, threatened or endangered species
- high = A predominance of native species with nonnative sp &/or disturbance tolerant native sp absent or virtually absent, and high sp diversity and often but not always, the presence of rare, threatened, or endangered species

Mudflat and Open Water Class Quality

- 0 = Absent <0.1 ha (0.25 acres) [For BR/CM <0.04 ha (0.1 acre)]
- 1 = Low 0.1 to <1 ha (0.25 to 2.5 acres) [BR/CM 0.04 to <0.2 ha (0.1 to 0.5 acre)]
- 2 = Moderate 1 to <4 ha (2.5 to 9.9 acres) [BR/CM 0.2 to <0.2 ha (0.5 to 5 acre)]
- 3 = High 4 ha (9.9 acres) or more [BR/CM 2 ha (5 acres) or more]

Hypothetical Wetland for Estimating Degree of Interspersion**Microtopography Cover Scale**

- 0 = Absent
- 1 = Present in very small amounts or if more common of marginal quality
- 2 = Present in moderate amounts, but not of highest quality or in small amounts of highest quality
- 3 = Present in moderate or greater amounts and of highest quality

GRAND TOTAL (max 100 pts)

Refer to the most recent ORAM Score Calibration Report for the scoring breakpoints between wetland categories at the following address: <http://www.epa.state.ca.us/dsw/EDU401.html>

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